THE RIGHT USE OF IRON,

AND OTHER REMEDIES,

IN

THE CATTLE PLAGUE,

CONSIDERED IN A

LETTER TO SIR FITZ ROY KELLY, M.P., &c. &c.

BY

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THE RIGHT USE OF IRON,
ETC.

TO SIR FITZ ROY KELLY, M.P.

Dear Sir Fitz Roy,—

You are shocked, and with good reason, at the idea that every beast affected with the cattle plague shall be summarily knocked on the head. And so am I; but it is not the loss of the beef which afflicts me so much as the practical confession such a proposition amounts to—of the poverty of our means of curing disease.

Still there are some things that we can do toward saving life. If we can't put out a fever, we can mitigate it, or, at least, we can nurse the patient through it; and there always comes a stage when the fever is spent, and when we can do a great deal to prevent the patient from sinking exhausted under the damage it has created in the vital organs.

I purpose in the following pages to submit to you, and to the agriculturists in whose welfare you take so deep an interest, a very short account of the remedies that would be used for sick men, if suffering under a disease like the *Rinderpest*, so as to encourage experiment, in any case where experiment can be safely made; and to ascertain

whether something may not be found to cut short the disease, or at any rate to hasten recovery when its fury is passing away.

Let me say by way of preliminary that all the evidence I have been able to gather, both respecting the *Rinderpest* and the more familiar *pleuro-pneumonia,* shows this—that if the animal be killed as soon as it appears ill, the flesh is undistinguishable from that of a healthy animal. I am quite certain that, if the flesh of pleuro-pneumonic oxen were poisonous, we should have missed many a face that has gleamed at the sight of the Sunday sirloin, and most boarding-schools and charitable institutions would have been emptied of their inmates; so that if a joint of beef look good, smell good, and taste good, if the lean be nicely marbled, and there are no signs of emaciation, for my own part I should eat it without scruple, and act upon the very sensible advice which St. Paul gave to such of the Corinthians as had scruples about eating meat offered to idols.

Therefore, if in a crowded herd any beast fit to kill is killed at the first suspicion to save its beef, well and good; or if the disease have decidedly declared itself, and the first patients be killed and buried to save the rest from infection, there is nothing to be said against it: but surely, if means of keeping such beasts apart can be had, and if such beasts be guarded in a fit place with all precaution, so that there shall be no chance of their spreading the mischief, then it is at the least a laudable experiment to see if some mode of treatment cannot be found, which shall save even a moderate percentage. For my own part I think that cattle may be safely treated in Sanatoria, and that experiments ought to be made in them. And I pray you to observe that the treatment I venture to suggest is one that will disinfect the whole tract

of the intestines, and so destroy the material of contagion at what is believed to be its source.

In order to make more clear what seems to be the right direction in which to look for remedies, we may just glance at what is known and believed of the nature of the class of diseases to which the *Rinderpest* belongs.

It belongs to that class which the Registrar-General terms *Zymotic* or *Ferment-like;* and a very good name it is. As a little bit of yeast, which we now know to be a living vegetable, if put into a tub of sweet-wort, produces a monstrous commotion, causes a fever, makes the wort hot, gives off a gas, and ends by turning sweet malt and water into intoxicating beer, whilst meanwhile the original yeast is multiplied a million-fold, having found materials of growth in the nitrogenous constituents of the barley; so with these diseases. An insignificant quantity of the leaven of one of the zymotic diseases, viz. small-pox, is inserted into a prick, or is breathed in the air,—for the particles of these germs of disease are so subtle that they can be proved to be easily transportable in a current of air,—then what happens? First, a *hatching time*, which the germ of the disease takes before it is fit to do mischief—*a period of incubation*, as the learned say. Secondly, the *onset*, which always in diseases of this sort in all Mammals is testified by malaise, shivering, discomfort, and lowness. Thirdly, a period of high fever. Fourthly, a period in which *local effects* show themselves: the pustules over the skin in small-pox, the sloughy throat in scarlatina, the blebs in chicken-pox, the rash and sore chest in measles, and so of the rest. Fifthly, comes a time when the disease tends to get well of itself, and then the patient's fate depends on this one point: Has the disease made such havoc that the patient has strength to recover from it, or no? For example,

after small-pox the whole skin may be in a state of slough; after scarlatina the throat may be riddled with abscesses, and after typhoid the guts may be honeycombed with ulcers, and so on of others; so that after the fever, strictly speaking, has got well, the sick man, or what is left of him, cannot repair its ravages. Meanwhile, the leaven of the disease has multiplied itself a million-fold, so that one infected individual is able to poison an entire nation.

Now, in this catalogue of symptoms and stages, we find in all fevers a certain middle point,—that time, namely, when the disease tends to get well of itself.

All these diseases have a certain tendency, at a certain time, to get well, if the patient can be got to live through them—just as a fire tends to go out of itself; then when the fire has burnt itself out, if the building be not a strong one, down go the walls.

Now, in any zymotic disease, the first question is, can we stop it? can we put out the fire? Have we any medicines capable of summarily checking the disease, before it comes to the point at which it is naturally spent?

Id votum est. We wish we had, but have not. Providence will show us the way some day, if we exert ourselves. But at present the only fevers which we can *cut short* are the malarious ones: ague, remittent, *febbre perniciosa*, jungle fevers, &c.; against which we have quinine, arsenic, and other tonics. We have not at present any remedies on which we can rely for *cutting short* any true zymotic disease; such as small-pox, chicken-pox, measles, scarlet fever, typhoid, typhus, whooping cough, and all that other dreary catalogue. But if we are to make experiments on the *Rinderpest*, there are two or three glimmers of light to guide us.

Supposing that we seek for remedies for the early

stage: to cut the disease short, deliberate trials should be made,

First, into the various alkaloids, amorphous or crystallized, produced from Chinchona bark, of which Quinine is the chief. But there are many others, such as Chinchonine, Chinchonidine, and Quinidine, which are got from the bark, which may now or will soon be obtained abundantly in India, and which are cheaper. We have just as much reason, and no more, to expect these substances to cure the Cattle Plague, as the Spanish Pilgrims had, three centuries ago, to expect the bark to cure the Countess of Chinchon's ague. It was a fair experiment, which succeeded. Certainly, large doses of these alkaloids ought to be well tried. If we give six doses, of ten grains each, to a man weighing 160 lbs., we ought to give in the same proportion per weight to a cow. Mr. John Eliot Howard, Quinine manufacturer, London, E., should be written to, for the cheaper and amorphous varieties of the Chinchona alkaloids.

Secondly, there are various combinations of bitters, astringents, and aromatics, with stimulants. When they could get no Peruvian bark on the Continent, during the war with France, combinations of alum, oak bark, gentian, and aromatics were used, with more or less success, for their malarious fevers.

Thirdly, there are certain saline matters—such as nitrate of potass and chlorate of potass, antimony, purgatives, &c.,—which have more or less virtue in allaying some feverish symptoms, but which are not to be relied on in any zymotic or malarious disease.

Lastly, there are stimulants which may be tried in the commencement of the attack with the hope of enabling the animal to shake off the disease, even as a glass of hot brandy

and water, Turkish bath, and other excitants, may, as I believe, enable man to shake off the earliest stage of influenza.

So far then as remedies are concerned, which tend to *cut the disease short*, experience bids us look for specifics amongst the quinine group. And it is experience only that can teach us: *à priori* reasoning gives a very feeble glimmer.

But, confessing that we are unable to deal with the disease in its essence, there is a very great deal we can do in the way of mitigating its local effects; of keeping up the strength; of preventing the patient from being poisoned by the poisonous secretions generated within her own system; of checking exhausting discharges; and of rendering those secretions innocuous to other animals. It must, however, be borne in mind that whilst we speak of the different stages of the disease, and can always separate them in idea, they may be all so crowded together that it may be necessary to begin at the very outset with the treatment adapted for preventing local ravages and intestinal infection.

Now the chief local effects produced by the *Rinderpest*, are a softened, congested state of the mucous membrane of the alimentary canal, with copious fetid discharge from the bowels; and the most likely class of remedies are those which will restrain this discharge, and so prevent it from draining the patient, and which shall deprive it of its poisonous qualities, and thus hinder it from doing mischief to the patient, or, if voided, from contaminating other animals.

If putrid excretions be poured out in the bowels of any animal, they poison the animal's blood, they cause all fresh food to be tainted, and when voided they are the source of contagion to others.

Now then we seek a remedy which shall not be poisonous in itself; which shall have tonic or nutritive virtues; which shall restrain excessive discharges; and which shall have the power of deodorizing and disinfecting the contents of the alimentary canal. Such a remedy is the *tincture of sesquichloride of iron;* and here I quote from the Third Volume of the "Obstetrical Transactions," a cure in which the patient's condition bore the strongest resemblance to that of a cow just beginning to die of the cattle plague. There was a zymotic disease, an exhausting diarrhœa, and a most fetid state of secretions; and when the latter two conditions were removed, the patient began to get well.

The tincture of sesquichloride of iron has been largely used in erysipelas and other zymotic diseases of low type; and although I have seen it fail, yet I believe it deserves a thorough trial. The dose should be large, and it should be given till its effects are seen in the animal's motions, which ought to be rendered black and inodorous.

Abridged from the Transactions of the Obstetrical Society of London, vol. iii. p. 30.

"CASE OF PUERPERAL FEVER, COMPLICATED WITH DIPHTHERIA, IN WHICH LIFE WAS SAVED BY THE SESQUICHLORIDE OF IRON.

"Mrs. S——, æt. 42, confined of her fifth child, a boy, on Tuesday, the 28th February, 1860. The labour was easy and natural, and she went on well till Monday, the 5th March. On the seventh day from her confinement, at 5 A.M., she was seized with violent shivering and pain in the left leg. The pain soon left the leg, and extended up to the stomach, and fixed upon the left side, below the mamma. She passed an extremely restless night, and took considerable

quantities of beef tea and brandy and water, which she craved for, as she felt them do her good.

"The condition in which I find her is this:—complaining of shivering and of great weakness; looks collapsed and very ill. Pulse 132, breathing 28; constant pain in left side, aggravated by deep inspirations; respiratory murmur everywhere perfect and exaggerated; skin hot; abdomen soft, slightly full, and very slightly tender above the uterus; lochia absent; milk diminished; mouth out of taste, tongue dry; craving for stimulants. Ascribed the illness to sitting up in bed rocking the baby two nights. I diagnosed the case as one of mild puerperal fever, with slight pleuritis as a local symptom. In order to purify the blood, prescribed Cal. gr. viii, Opii gr. j, immediately; warm fomentations to the stomach and side; beef tea and brandy and water *ad libitum*.

"Vesp.—Three bilious and feculent fetid motions. Much the same. Dover's powder, gr. v, 4tis horis.

"7th.—Tongue less nauseous; pulse 132, breathing 28; some refreshing sleep; abdominal tenderness less. Go on with Dover's powder and nourishment.

"Vesp.—Much more pain in left side; hard, dry cough; intense heat of skin; pulse 132, breathing 36. Three leeches to the side; Cal. gr. ss, Opii gr. $\frac{3}{4}$, Pulv. Jacobi Veri gr. $\frac{3}{4}$, 4tâ quâque horâ.

"8th, 9 a.m.—Much relieved by the leeches; pain easier; cough less; slept at intervals; abdomen free from pain or tenderness; bowels open thrice; motions liquid, yellow, offensive; lochia slight; milk gone; pulse 132, breathing 28.

"Vesp.—Bowels copiously moved; motions thin, reddish-yellow, very fetid; feels very exhausted; pain removed to

upper part of left chest. Blister; brandy, beef tea, and half-grain doses of opium.

"9th.—Some refreshing sleep; several motions; pulse 132; breathing easier; less cough; no abdominal tenderness; mind quite clear. A draught of fifteen minims of dilute nitro-muriatic acid, with syrup of ginger and camphor mixture, to be taken *ad libitum;* one grain of opium whenever restless or in pain. Suggested consultation with Dr. Frere, who diagnosed mild puerperal fever, thought the diarrhœa a probable source of exhaustion, and advised continuance of the remedies, for the patient feels the acid warm and comforting to the stomach, and takes it abundantly, besides enema of starch and laudanum after every motion.

"10th.—A restless night; diarrhœa continues; wandering during sleep; pupil narcotized; pulse 132; great emaciation; no pain nor tenderness; some hacking cough; dulness over left infra-clavicular region. Go on with acid and opium.

"11th.—Much the same; pulse 144; motions, six or seven in the last twenty-four hours, very liquid and offensive; some perspiration. Patient exceedingly feeble and restless during the night, wandering, picking the bed-clothes. Port wine, &c., opium and acid.

"Vesp.—Weaker. Three grains of quinine, six minims of laudanum, and fifteen of dilute sulphuric acid, every four hours.

"12th.—A very restless night; diarrhœa continues; motions pass involuntarily; pupils very contracted; no pain; pulse 122 to 144, breathing 28; patient incessantly picking the bed-clothes, and feeling all over the bed; drowsy and wandering; answers rationally when roused; takes nourishment eagerly and in enormous quantities. Go on with quinine, dilute sulphuric acid and laudanum, every four hours.

"Vesp.—Decided cinchonism; great deafness; some difficulty and constriction in swallowing; has wandered much when dozing; picks incessantly; tendons jerking; pulse 144; pupil very contracted; diarrhœa continues; other symptoms same. Omit opium. Tincture of catechu f℥iij every four hours, instead of each alternate dose of quinine.

"13th.—A quieter night; pupil not so contracted; still very deaf; pulse 132 to 144, and very feeble; motions frequently pass in the bed; breathing easy, 28; wanders, and says she fancies herself surrounded by trees; complains that the throat is closing, and that she cannot swallow; incessant picking and twitching; hates to be disturbed.

"At 3 p.m. had the advantage of another consultation with Dr. Frere. He considers the patient decidedly worse since his former visit; the rapidity of the pulse and great exhaustion and difficulty of swallowing were very ominous, and equally so the fact that the use of opium, quinine, and other remedies, combined with the most lavish administration of wine and nourishment, had not enabled the patient to hold her ground against the disease. In her favour was the fact of her keeping well up, and not sinking down to the foot of the bed, and a certain clearness and calmness of mind when the attention is roused. As the present set of remedies was inefficacious, he suggested the tincture of sesquichloride of iron, to be given in drachm doses, in sugared water, every two hours. Before leaving I went to the patient, poured out a large glass of port, and forced her to swallow it in large gulps, not in small sips such as she had been fruitlessly trying to get down, and encouraged her to persevere and fight for her life.

"10·30 p.m.—Two doses of the tincture have been taken, and the patient is certainly none the worse. To take ℥ij

every two hours, and an enema of ʒij in a cup of beef tea, with ♏xx of laudanum.

"14th, 8·30 a.m.—Has passed a tolerable night. Some sleep. Greatly harassed by difficulty of swallowing, constriction of the throat and flow of saliva; much cough, and thin salivary expectoration; pulse 108; likes the steel, and takes it readily, but the enema was rejected immediately, and another was equally unlucky. Bowels moved twice; motions as before; tongue fissured, and covered with aphthous spots.

"Vesp.—Considerable improvement in general feelings; pulse 132; *one motion only, black as ink, and completely deodorized; consisting of a thin, black liquid, full of curdled, black flakes;* thirst very distressing; begins to tire of the steel. Poultice to the throat.

"15th.—Considerable gain in appearance and strength; motions pultaceous and black, but less frequent; pulse still 132; skin moist; large crepitation over both lungs; consolidation of upper lobe of left lung; no pain; much cough and uneasiness of throat; all the posterior pharynx and tonsils covered with thick, whitey-brown coating; can taste nothing but the port wine. Omit the steel, because the patient loathes it. Give during the night two doses of quinine and acid.

"16th.—Not so well. A very restless, exhausting night, with coughing and efforts to clear the throat; pulse 132; skin natural; begins to pass urine without motion; slight return of lochia; no hoarseness; motions thinner and more offensive. Return to the steel in half drachm doses every four hours, and give a quarter of a grain of muriate of morphia at bed-time, and repeat it if necessary.

"17th.—A good night; much stronger, and refreshed;

posterior of wall of pharynx free; exudation advancing over roof of mouth; an attempt to detach it causes pain and bleeding; motions less frequent and more solid. Go on with the steel and morphia.

"18th.—Much better; removed to a sofa; tonsils and uvula partially clear; nose stuffy and sore; roof of mouth coated; one motion, quite solid; pulse 116; tongue much more natural.

"20th.—Much better; pulse 104; exudation entirely peeled off. N.B.—Up to this day eight bottles of the finest old port wine have been consumed, besides brandy; and four fluid ounces of tincture of steel, one of which was wasted in the lavements. Drinking *ad libitum:* the largest quantity of wine she took in one day was one bottle.

"22nd.—Improving; no fever; good appetite; but still considerable dyspnœa on exertion; difficulty of lying on left side without coughing, and complete dulness under left clavicle, with marked bronchial voice and respiration.

"From this date the patient continued to improve, slowly but steadily, till she went out of town, at the end of April; but she soon returned, with an attack of subacute synovial inflammation of the knees and ankles, with very foul tongue and feverishness, which symptoms were relieved by purgatives and bark with ammonia. After this she again gained flesh and strength, and gradually lost all cough and dyspnœa. I saw her from time to time, and was much interested in watching the gradual disappearance of the dulness under the left clavicle, till, by the end of July, I believed that the left lung was the better of the two.

"That this patient owed her life to Dr. Frere's suggestion of the tincture of steel seems to me certain; and equally so that the good effect of the remedy was due, not only to its

powerful tonic and stimulant virtues, but likewise to the fact that it completely deodorized the contents of the alimentary canal. This appears to me a most important point in many diseases, for *certes* it must be no small gain to check putrescent changes in the alimentary canal, and to allow nourishment to be absorbed untainted."

Never was woman nearer death than when we began the steel, and the effects of this remedy and the manner in which it acted were most palpable.

2. *The Mineral Acids*, well diluted—as the nitric, muriatic, and *sulphuric*—do in a lesser degree what the tincture of steel does. Their influence in atonic diarrhœa is marvellous; and we ought to know their results in the *Rinderpest*. Small quantities of opium may be added.

3. *The Trisnitrate of Bismuth* in ounce doses would deodorize the alimentary canal, and soothe it, and restrain diarrhœa. I have published cases, showing how, in threatened ulceration of the bowels, the human alimentary canal may be quieted by adequate doses of this excellent drug. See *Medical Times and Gazette* for 1862, vol. ii., p. 595.

4. *Sulphite of Potass* and other compounds of sulphurous acid have great virtue in checking fermentation, and have been proposed by Polli as remedies in zymotic fevers.

5. The admirable preparations of Mr. Condy, the permanganate of potass, &c. We want experiments with large doses of these. But I suspect they are of more value as preventives than as curatives,—to disinfect unwholesome water, to rinse the mouths of animals exposed to contagion, and the like.

6. There is the class of *Creosotes*,—medicines, such as carbolic acid, which check fermentation, act as antiseptics

and deodorizers, and are capital in certain cases of dyspepsia and diarrhœa.

Here then we have half-a-dozen remedies, and the example I have given from practice on man shows the precise method in which good results are to be looked for. I reiterate again the necessity of disinfecting the whole tract of bowels, of restraining discharge, and of rendering the fæcal matter innocuous to the patient and her neighbours,—all this, too, as a means of helping the patient to live through her disease till its fury be overpast.

Whiskey, sweet spirits of nitre, beef-tea, and other nourishment, should be given freely.

There are other remedies too, as *yeast* in large quantities, whose *modus operandi* is probably that of an antiseptic, and others. Enough if I can succeed in inducing any one who can do so with safety to make a resolute series of experiments on diseased animals.

One good effect the Cattle Plague is sure to leave behind, it is the increased cleanliness of cattle stalls, and greater humanity in the mode in which the poor creatures are conveyed by rail and steamer. Here I must cut short this hasty letter, and remain,

Dear Sir Fitz Roy,
Yours very obediently,
R. DRUITT.

Hertford Street, London, W.
22*nd September*, 1865.

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